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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/021,956

12/17/2001

Frank William Schadewald JR.

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09/05/2003

MERCHANT & GOULD PC
P.O. BOX 2903
MINNEAPOLIS, MN 55402-0903

EXAMINER

CHEN, TIANJIE

ART UNIT

PAPER NUMBER

2652

DATE MAILED: 09/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/021,956

Applicant(s)

SCHADEWALD ET AL.

Examiner

Tianjie Chen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 June 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 11-17 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 21 is/are allowed.
- 6) ☒ Claim(s) 1-4,7-10,18,19 is/are rejected.
- 7) ☒ Claim(s) 5,6 and 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

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Final Rejection

Election/Restrictions

1. This application contains claims 11-17 drawn to an invention nonelected with traverse in Paper No. 6 filed on 03/11/2003. A complete reply to the final rejection must include cancelation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 7-10, 18, and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Johansen (US 5,963,415).

With regard to claim 1, Johansen shows an electrostatic discharge protection device 30 in Fig. 2 for protecting a head (Column 4, lines 40-42) gimbal assembly circuit 16 (Column 4, line 63) from electrostatic discharge (Column 4, lines 55-56), the device including: a housing 31 (Fig. 3; column 4, line 57); and a shunt 50 positioned within the housing 31, the shunt 50 including a pair of electrical contacts 56 (Column 5, lines 47), the shunt having a first position (Fig. 4) in which the electrical contacts are in electrical communication with the circuit 16 and a second position (Fig. 2) in which the electrical contacts are not in electrical communication with the circuit; wherein the shunt can be reversibly moved between the first position and the second position (Column 6, lines 7-44).

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With regard to claim 2, Johansen further shows that the device can be used in a head gimbal assembly testing apparatus (Column 6, lines 7-44).

With regard to claim 7, Johansen further shows a deshunting pin 72 (Fig. 4; column 6, lines 32-44) that is reversibly moveable from a shunted position in which the pair of electrical contacts are in electrical communication with the circuit to an unshunted position in which the pair of electrical contacts are not in electrical communication with the circuit.

With regard to claims 8 and 9; Johansen further shows that the shunt is configured to protect a head gimbal assembly and the shunt provides a limited resistance between the electrical contacts that are in electrical communication with the head gimbal assembly's reader/writer circuit (Column 1, lines 18-19).

With regard to claim 10, Johansen further shows that the housing is configured to snap onto a printed circuit board (Column 5, lines 5-13).

With regard to claims 18 and 19, Johansen shows a protection device as described above, which includes: means for electrically communicating with a circuit to be protected; and means for reversibly shorting a portion of the circuit to be protected; by lifting (by depressing; column 5, lines 65-66) means 56 for electrically communicating relative to the circuit 16 so as to separate the means for electrically communicating and the circuit, and returning (by releasing) the means for electrically communicating from the lifted position relative to the circuit to a position in which the means for electrically communicating and the circuit are electrically connected; a pair of electrical contacts that are moveable from a first position in which the electrical contacts are in electrical communication with the circuit to be protected to a second

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position in which the electrical contacts are not in electrical communication with the circuit to be protected.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Johansen in view of Cheung et al (US 6,335,263).

With regard to claim 3, Johansen shows a protection device as described above but does not show that the shunt provides a limited resistance of less than about 0.1 ohms between the electrical contacts when the shunt is in its first position.

However, Johansen shows that the shunt 50 and the ground 60 are both made of metal (Column 5, lines 19-21 and 42-43), the shunt can be manually moved in and out manually (Abstract, last line). Cheung et al shows that metal contact resistance having a specific contact resistance of no larger than $\rho = 10^{-7}$ Ohm-cm² (Column 4, lines 66-67).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to find that the shunt provides a limited resistance of less than about 0.1 ohms between the electrical contacts when the shunt is in its first position. The rationale is as follows: as disclosed in Johansen that the contact is a metal contact. Furthermore, since the shunt can be manually operated, the smallest width of the contact is at least about 0.1 mm, therefore, the contact area would be no less

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than $S = 0.01 \text{ mm}^2 = 10^{-4} \text{ cm}^2$. The contact resistance is $R = \rho \times S = 0.001 \text{ Ohm}$, which is less than about 0.1 Ohm.

4. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Johansen in view of Combe (US 6,301,087).

With regard to claim 4, Johansen shows a protection device as described above and further shows that the device needs to be able to protect against electrostatic discharge of a few of volts (Column 2, lines 29-32), but does not show it is between about 2 and 5 volts.

Combe shows a device for protect magnetic head in a disk device from electrostatic discharge in the range of two-three volts.

It would have been obvious at the time the invention was made to one of ordinary skill in the art to set the protect device to protect against electrostatic discharge between about 2 to 3 volts. The rationale is as follows: Johansen teaches the protecting range is a few of volts, Combe has specified it in the range of 2-3 volts. One of ordinary skill in the art would have been motivated to find that the "a few volts" could be 2-3 volts, which is in the range of "between 2 to 5 volts."

Allowable Subject Matter

5. Claim 21 is allowed.

Claims 5, 6, and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

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With regard to claims 5 and 6, Johansen (US 5,963,415) shows a electrostatic discharge protection device having a shunt, which can be reversibly moved between the first (shunted) position and second (unshunted) position, but fails to show a deshunting rail that is configured to accept and support a portion of the pair of electrical contacts when the shunt is in its second position and to lift the pair of electrical contacts so that electrical communication between the shunt and the circuit is broken.

With regard to claims 20 and 21, Johansen (US 5,963,415) shows an electrostatic discharge protection device having a deshunting pin, but fail to show a deshunting rail.

Applicant's rail can be moved manually or moved by a mechanical testing apparatus between the shunted and unshunted positions (Specification, p. 7, lines 13-15).

Response to Arguments

6. Applicant's arguments filed 06/30/2003 have been fully considered but they are not persuasive.

- Applicant argues in p. 6 'Johansen fails to disclose a shunt that has "a second position in which the electrical contacts are not in electrical communication with the circuit."'
- Examiner's position: Johansen discloses 'a shunt that has "a second position in which the electrical contacts are not in electrical communication with the circuit."' Since Johansen discloses that "by selectively depressing the corresponding ground contact 56 to break electrical contact with bar 60" in

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column 5, lines 65-66; it makes the circuit a open circuit, therefore, there will be no electrical communication with the circuit.

- Applicant states in pp. 7-8 "The Examiner specifically noted reasons for indication of allowable subject matter. Applicants submit that claims 5, 6, and 20 may be allowable for additional reasons not stated by the Examiner."
- Examiner call Representative's attention that this is a "Examiner's Statement."

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

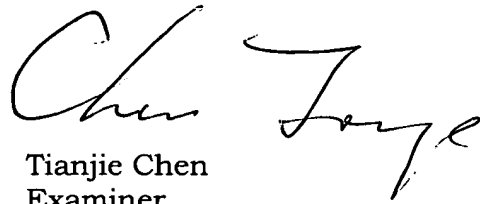
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tianjie Chen whose telephone number is (703) 305-7499. The examiner can normally be reached on 8:00-4:30, Mon-Fri.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Nguyen can be reached on (703) 305-9687. The fax phone numbers for the organization where this application or proceeding is assigned are (703)746-6037 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-0377.


Tianjie Chen
Examiner
Art Unit 2652

August 8, 2003